

***Astragalus misellus* S. Wats. var. *pauper* Barneby**
pauper milk-vetch
Fabaceae (Pea Family)

Astragalus misellus* var. *pauper
pauper milk-vetch

Status: State Sensitive

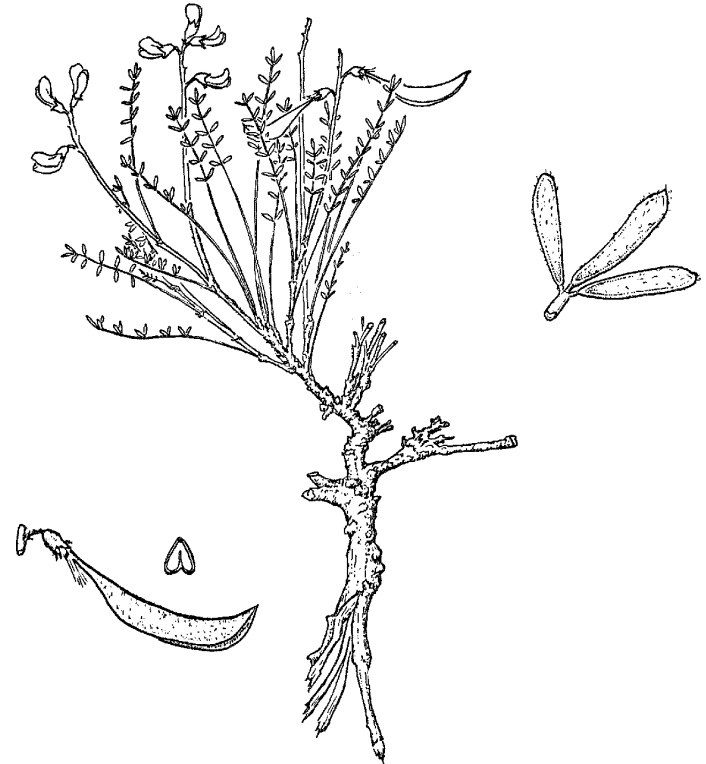
Rank: G4T3S3

General Description: A low, rosette-forming perennial herb, 3 to 6 inches tall, from a taproot and branched crown. The stems are spreading to ascending, 1 to 3 inches long. Leaves are 1 to 3 inches long, composed of 11 to 13 small narrowly oblong leaflets, about 1/4 inch long and 1/16 inch wide, with short hairs on both upper and lower surfaces. Flowering stems are 2 to 6 inches long, lengthening as the flowers and fruits mature; exceeding the leaves at maturity. Flowers are pea-like, whitish-yellow, about 1/4 inch long, numbering 5 to 15 per flowering stalk. The fruits are pea-like, 2 to 8 per fruiting stalk; pendulous, nearly straight to curved about 90 degrees; 3/4 to 1 1/4 inches long and about 1/8 inch in diameter at maturity, with short hairs. The pod is attached by an obvious narrow stipe that is longer than the 1/8 inch long calyx tube. In cross section the pod is roughly triangular, somewhat indented on the underside where the two halves of the pod meet. It is along this line that the pod splits open when the seeds are ripe. Not all of the 11-17 ovules generally mature to seeds. After the pod splits in half the small lentil-like seeds remain enclosed in the pod by a thin membrane.

Identification Tips: *Astragalus misellus* var. *pauper* is unlike any other *Astragalus* that occurs in its environment. It is recognized by its small, semi-rosette forming habit, with short stems, spreading or ascending, but not primarily erect; and stipitate, pendulous pods that are trigonous in cross-section and fall from the plant when mature. An interesting characteristic of the flower is that the outer portion of the flower is bent about 45 degrees along the horizontal plane, relative to the base of the flower.

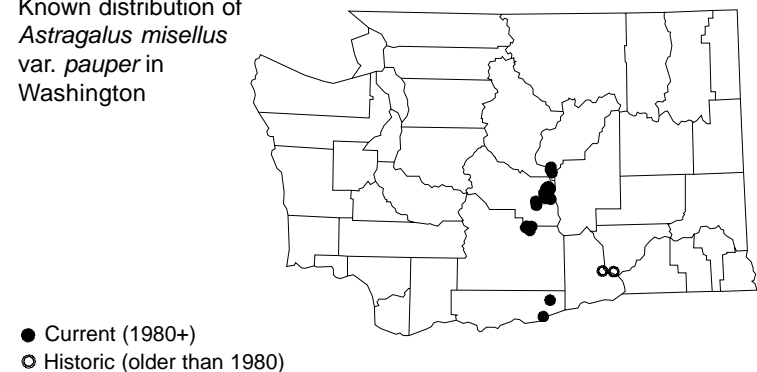
Phenology: Flowers April through mid-May. By late June all fruits are mature and plants fall into dormancy.

Range: Endemic; currently known from Douglas, Kittitas, Klickitat, and Yakima counties, Washington. There are two additional unverified reports for *A. misellus* (without variety) from Benton and Franklin counties. Given the geographic ranges of the two varieties, these occurrences are more likely to be var. *pauper* than var. *misellus*. Occurs in the Columbia Basin and in the transition zone to the Eastern Cascades physiographic provinces.



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Known distribution of
Astragalus misellus
var. *pauper* in
Washington



Astragalus misellus* var. *pauper

pauper milk-vetch



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Habitat: *Astragalus misellus* var. *pauper* occurs on open ridgetops and upper slopes, and rarely middle and lower slopes, mostly along the western margin of the Columbia Basin province. The species grows in the *Artemisia tridentata*/*Agropyron spicatum* zone of Daubenmire (1970). Associated species include stiff sagebrush (*Artemisia rigida*), rock buckwheat (*Eriogonum sphaerocephalum*), bluebunch wheatgrass (*Agropyron spicatum*), bluegrass (*Poa secunda*), line-leaf fleabane (*Erigeron linearis*), long-leaved phlox (*Phlox longifolia*), large-fruited lomatium (*Lomatium macrocarpum*), and western hawksbeard (*Crepis occidentalis*). Occurs mostly on gentle slopes at elevations ranging from 500 to 3000 feet.

Ecology: Frost heaving of saturated soils during late winter or early spring is the primary type of natural disturbance affecting populations. Frost heaving probably hinders the establishment of large plants (such as shrubs), while providing an open seedbed for seedlings. This is a nitrogen-fixing species which occurs on substrates suspected of being low in nitrogen.

State Status Comments: The limited range and relatively narrow habitat requirements contribute to the species current status.

Inventory Needs: Additional inventory is needed in south-central Washington (especially Grant, Yakima and Benton counties).

Threats and Management Concerns: Soil disturbing activities such as grazing, road construction, and military training pose the greatest threat. Herbicide and insecticide drift from adjacent agricultural lands may also be a threat.

References:

Barneby, R.C. 1964. *Atlas of North American Astragalus Part I: The Phacoid and Homaloboid Astragali*. Memoirs of the New York Botanical Garden Vol 13: 456-458.